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(71) Applicant (for all designated States except US): E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; 1007 Market Street, Wilmington, DE 19898 (US).			
(72) Inventors; and (75) Inventors/Applicants (for US only): CAHOON, Rebecca, E. [US/US]; 2331 West 18th Street, Wilmington, DE 19806 (US). KINNEY, Anthony, J. [GB/US]; 609 Lore Avenue, Wilmington, DE 19809 (US). SAKAI, Hajime [DE/US]; 105 Banbury Drive, Wilmington, DE 19803 (US). SHEN, Jennie, Bih-Jien [US/US]; 15 Bromley Court, Wilmington, DE 19810 (US). BUTLER, Karlene, H. [US/US]; 844 Broadfield Drive, Newark, DE 19713 (US). SAYLOR, James, J. [US/US]; 228 Duncan Avenue, Wilmington, DE 19803 (US).		Published <i>With international search report.</i>	
(74) Agent: FEULNER, Gregory, J.; E. I. du Pont de Nemours and Company, Legal Patent Records Center, 1007 Market Street, Wilmington, DE 19898 (US).		(88) Date of publication of the international search report: 14 September 2000 (14.09.00)	

(54) Title: **PLAN LECITHIN:CHOLESTEROL ACYLTRANSFERASES**

(57) Abstract

This invention relates to an isolated nucleic acid fragment encoding a plant lecithin:cholesterol acyltransferases. The invention also relates to the construction of a chimeric gene encoding all or a portion of the plant lecithin:cholesterol acyltransferases, in sense or antisense orientation, wherein expression of the chimeric gene results in production of altered levels of the plant lecithin:cholesterol acyltransferases in a transformed host cell.

Arabidopsis (gi 3935185) MKK-----1-SSHYVVJAILVVVVTMTSMQAVGNN-----VYPLILVPGNGGMOLEVR
corn_ (SEQ ID NO:2) HAR-1PQVLAPELLLLPAGLR--ELMIDRRPLPKRCRREVLLHPLVLPGLTCELDAR
corn_ (SEQ ID NO:4) MVNDHAS-----CSRGGTIVLSKFASSTRAPKO-----LPFVVVVPGYATNELDAR
corn_ (SEQ ID NO:6) NASSLLQQLSLLLLLPLRLREHLSGHNAVSAN-----NFRNFIPLVAGVSCSLEAR
soybean_ (SEQ ID NO:8) HKKEQEEGL-KIEVATLTVTVVVVVMSLLCTCGASH-----LDPLILLPGNGGMOLEVR
Arabidopsis (gi 3935185) LDREYKPSVWCSSWLYPIHKKSGGWFRLWFDAAVLLSPIT-RCFSDRMHLYYDPLDDY
corn_ (SEQ ID NO:2) LTDAYRPFRAACDE-----GGLVRLMTNCSLDLPAHHYVRCFNEQMALVYDPAVNDY
corn_ (SEQ ID NO:4) LTELHPSSPRCA-----HKGKGFRLYLYNTALEDAADVRCFAEQMATAYDAASDDY
corn_ (SEQ ID NO:6) LTEEYRPSVPHCGA-----HKGKGFRLYLYNTALEDAADVRCFAEQMATAYDAASDDY
soybean_ (SEQ ID NO:8) LTNQKPSSTIICESW-YPLIKKNGWFRLWFDSSVILAPT-QCTAERMTLHYHQELDDY
Arabidopsis (gi 3935185) ONAPGVOTRVPFGSTKSLLYLDPRLRDATSYHEHLVKALEKKCGYVNDOTIL
corn_ (SEQ ID NO:2) RNLPGVETRVNFGSSRGF-QKNPEMTTSMCFVLRAHELARA-GYRGGDTLF
corn_ (SEQ ID NO:4) RNAQGVETRVNFGSTRAFRYPDPDRNF-SYMDKTVSRLERL-AYRDGENLF
corn_ (SEQ ID NO:6) RNLAGVETRVNFGSTRAFRSHKNPLKSD--WCLGKLRAALEDM-GYRGGDTMF
soybean_ (SEQ ID NO:8) FNTPGVETRVNFGSTNSLLYLNRKLNITGYNAPLVDSLQKL-GYADGETLF
Arabidopsis (gi 3935185) GLAAGHPSRVASQFLQDLKOLVEKTSSEMEGKPVILL LFLVHLNRTTPSWA
corn_ (SEQ ID NO:2) APFVPGOPSRSSPATSVGWPSLVEDASRKNRGRKVLFG HVALEFVRSTPHAMR
corn_ (SEQ ID NO:4) AVAPPGHPSRVADAFGRLLRIVERASRANGGCVPTIVA TVAHQFLRRPLPWR
corn_ (SEQ ID NO:6) APFSPGOTSEVYSRYTLMELVEAASERTR-KKAVILG HVALEFVRSTPHAMR
soybean_ (SEQ ID NO:8) GLAAGHPSQVGSKFLKDLKNIIEASNSNMGKPVILL LFLVQLLNRPSPSWA
Arabidopsis (gi 3935185) RXYIKHFVALAAPN-GGTISOMKTFASGNTLG-VPLVNPL--LVARNORTSESQWLLPS
corn_ (SEQ ID NO:2) DRYIKHFLVAPVPAEGFVKPLQYFVSGSNLMVPTVSSELPATRPWHRTFESSLVNFP
corn_ (SEQ ID NO:4) RRFVRRFVPAAPH-GGVVLGHLTI VAGNHLG-LPFVDPL--ALKGEYSLOSSLWPLPN
corn_ (SEQ ID NO:6) RENIERLVVAPTLPGGFLEPVNFASTGTDILYVATTPLAT--RAMWRSFESAVNFP
soybean_ (SEQ ID NO:8) KKFIKHFIALSAPH-GGAIDENYTFASGNTLG-VPLVDPL--LVREORSESQWLLPN
Arabidopsis (gi 3935185) TKVFDRTKPLVVTPOVNYTA--YENDRE FADIGTSQGVVPYKTRVLPLTEELMTGVPVP
corn_ (SEQ ID NO:2) PAVTGR--RPLVVTARRNYSA--YDLEDLLVAVGVGAGVEPFRRAVPHKGSYFOAPHVPT
corn_ (SEQ ID NO:4) PNAFRA-GOPLVTTTRRTYTA--HDMADFLOAIGLGAIVPQSRVLPFLRELPSVFPV
corn_ (SEQ ID NO:6) PAVFGRLOAPLVVTRERNYSASANDMERFLAAGVSGEAAEPFRRAVPHKGSYFOAPHVPT
soybean_ (SEQ ID NO:8) PKIF-GPOKPIVITPIRPSYA--HDMVDFLKDIFGFEQVTPYETRIPLIGNIKAPQVPI
Arabidopsis (gi 3935185) TCIIY KOPEIK- ASLAAL-----KVDS-LN
corn_ (SEQ ID NO:2) TCHN A7PEIV- VSMIAFDEKWRROPQONKVVYK
corn_ (SEQ ID NO:4) ACVV VTPMHV- VSLLAQVP-AMRLPTA-Y-FR
corn_ (SEQ ID NO:6) TYIS AAPEVAA ISVLATFKEHNRROPQONKVVYK
soybean_ (SEQ ID NO:8) TCIIH ERPEIS- VSLLAQS-LWKEERNOY-LK